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THE EXCAVATING ENGINEER PUBLISHING COMPANY

BRADLEE VAN BRUNT, Manager and Editor

267 NATIONAL AVENUE MILWAUKEE, WIS., U. S. A.

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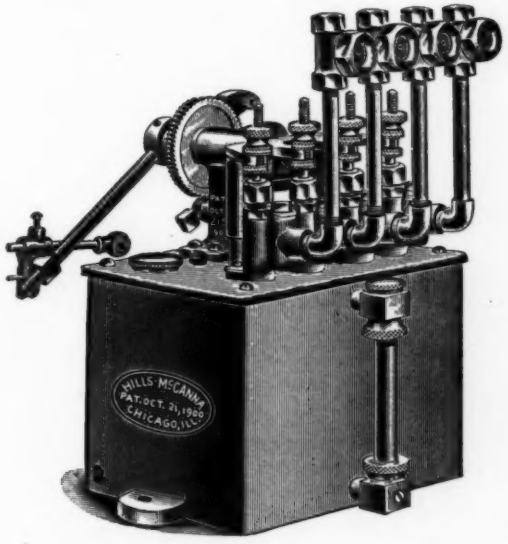

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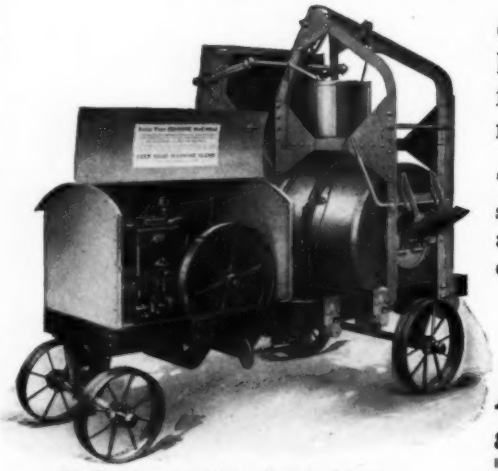

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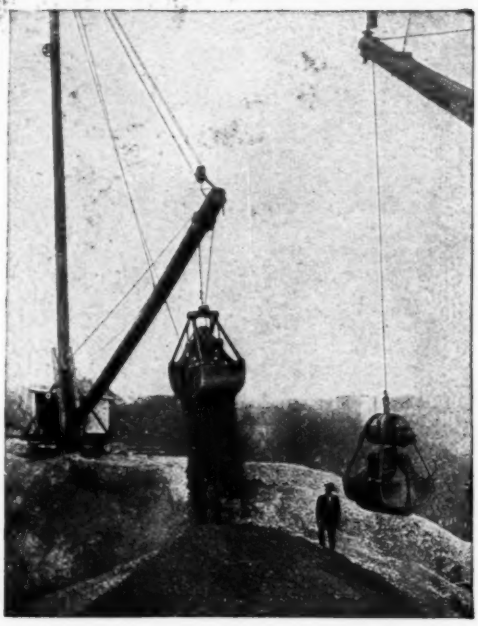

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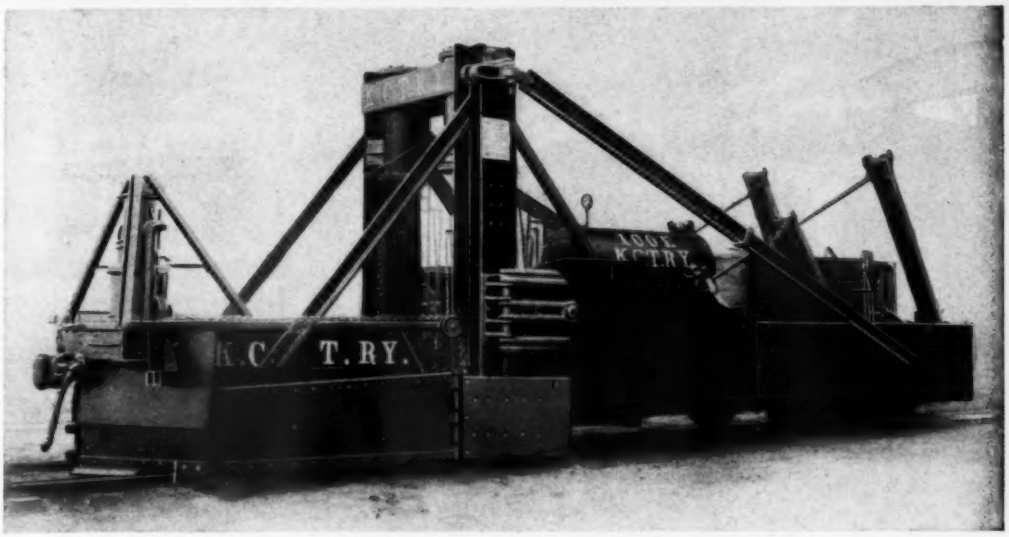

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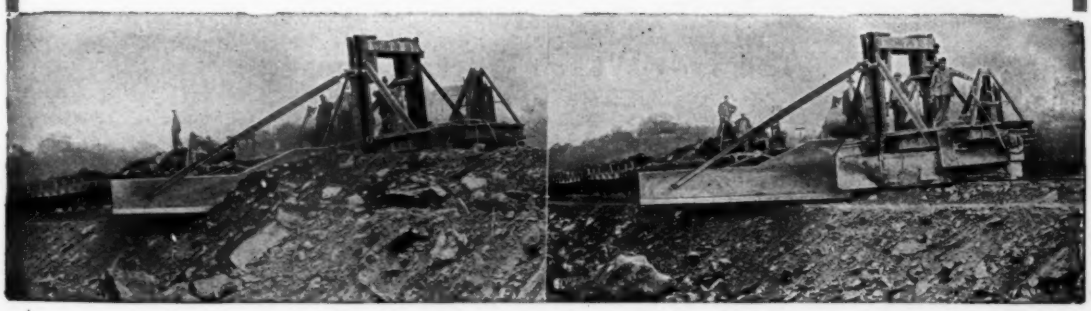

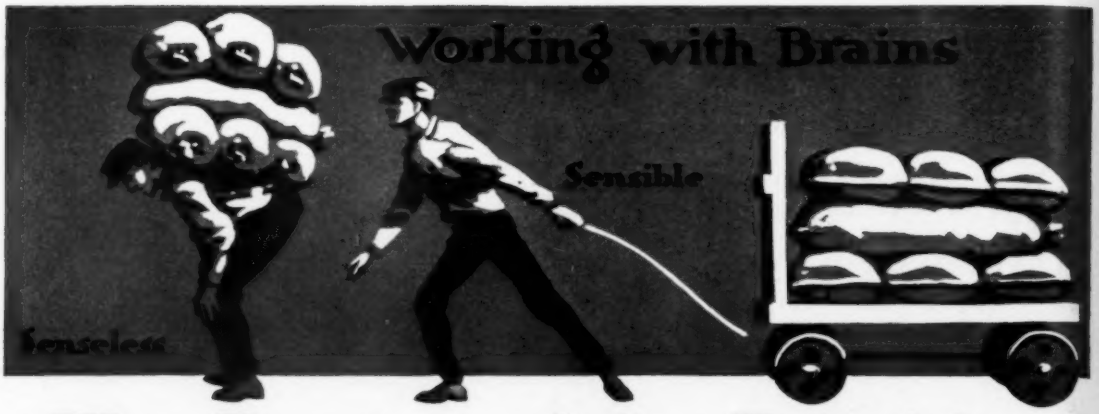

The Passing of the Primitive

Carrying is not Hauling

Primitive men carried their loads. Then they found they could drag more than they could carry. They could roll more than they could drag. On wheels they could pull still more. The history of transportation on land is a history of the pulled load. There is only one exception and that is the motor truck; and it has already been proved that the motor truck will reach its ultimate field only with the aid of its trailers—only when primitive carrying is combined with practical pulling.

There's something about your motor truck that you may never have suspected.

Stated in a paradox, when it's full it's nearly empty.

Stated in actual fact, for every ton it carries, it can pull 3 to 5 tons on a trailer in addition.

Loaded to rated capacity, it is only about 25% efficient.

Let This Truth Make You Think

For every pound your truck is rated to *carry*, it will deliver half a pound of draw-bar *pull*. And every pound of draw-bar pull will move eight pounds of live load on a properly constructed trailer, over any average road.

Now figure your own chances for better trucking.

Your three-ton truck has 3,000 pounds draw-bar pull, even when loaded to capacity. This 3,000 pounds will pull 24,000 pounds on trailers with average speed and average road conditions. 24,000 pounds is 12 tons. Add your three tons original rated capacity and your truck with trailers handles 15 tons instead of 3—400 per cent increase at practically no increased expense for tires, gasoline or other operating charges. This is possible performance.

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Convenience isn't the basic argument for motor truck operation. The motor truck won't stay unless it pays. And it must pay in dollars and cents—in absolute saving per ton mile—in net reduction of hauling-expense at the end of the year.

With 75 per cent of its effective working power allowed to leak away at the draw-bar, your motor truck will have to do unusual work in order to show a net profit. But with Troy Trailers and the conversion of draw-bar pull into actual merchandise pull at the rate of, say three to one on deliveries, and the former basis of operating cost—profits are no longer questionable.

NOTE: Trailer operation is affected by individual conditions. Our study of hauling conditions enables us to know whether trailers will pay or not. A large number of factors enter into the problem. If you will give us the facts of your present transportation system and the local conditions you have to meet, we will be able to give you figures on delivery costs with Troy Trailers. Send for Booklet 4 EE

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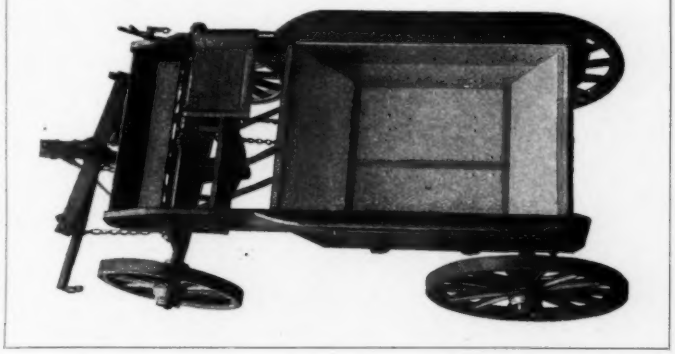

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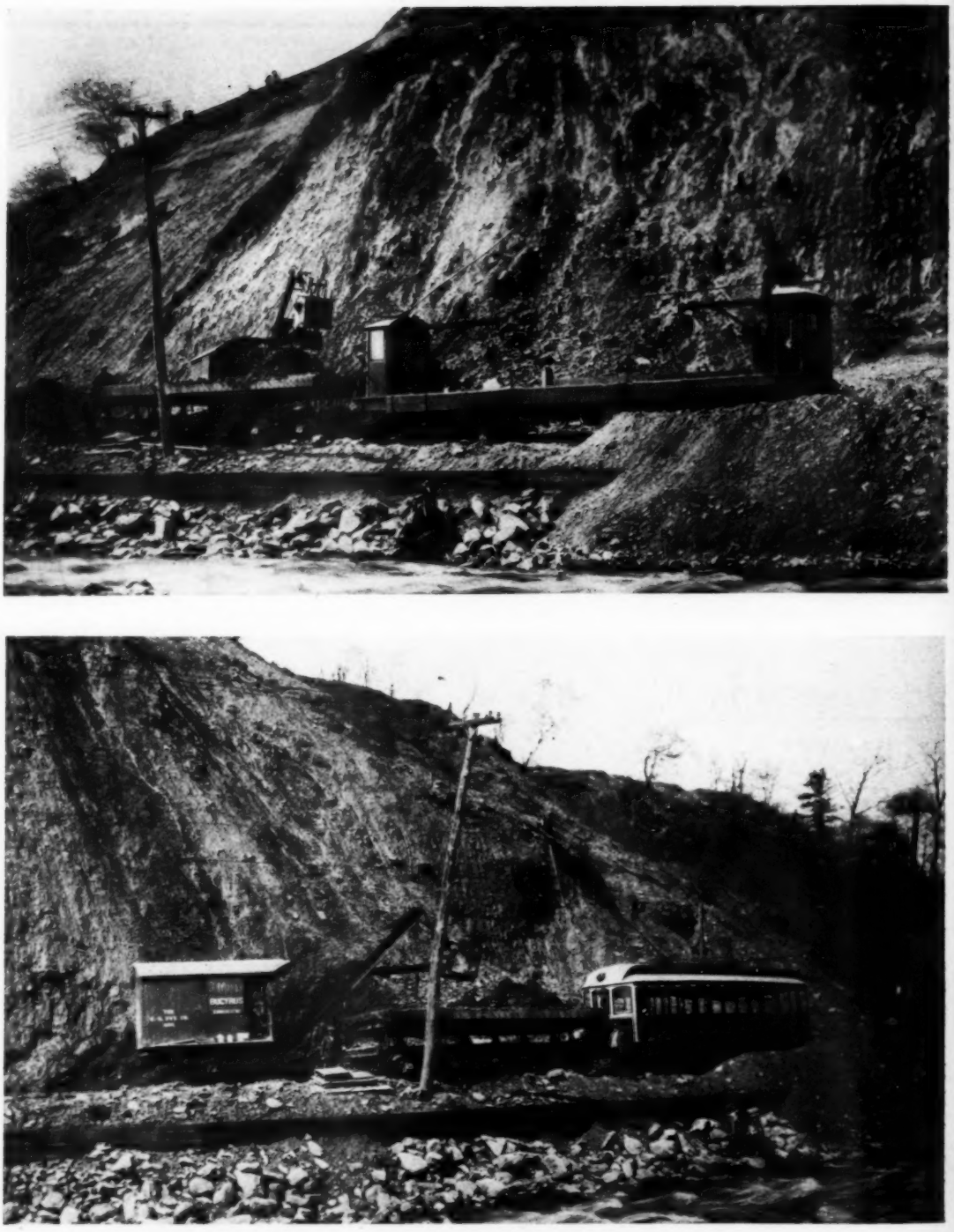


Bucyrus 14-B Electric Revolving Shovel Handling a Slide on the Wilkes-Barre Railway.

The Excavating Engineer

Vol. 11 JANUARY, 1915 No. 4

Electric Shovel Operation on an Electric Railway

The Wilkes-Barre Railway Company have been operating an electric revolving shovel on their lines for the past year with splendid results—Some records of performance with cost figures.

SINCE last January the Wilkes-Barre Railway Company have been operating on their lines a Bucyrus 14-B electric revolving shovel. The shovel has been engaged, for the most part, in re-alignment, grade reduction, double tracking and the removal of slides.

On account of the intermittant character of the work, the prevalence of delays due to traffic, and occasional lack of power on certain divisions, the figures of output are not as striking as they might have been, had conditions been different. Through the courtesy of E. A. Hoffman, engineer of way, and Edward George, engineer in charge of the shovel, we are able to give a few figures of output and cost and a description of typical conditions, that even with the above mentioned handicaps indicate a surprising economy. Indeed, it is safe to assume that the shovel is doing the work of at least one hundred men under former conditions.

Operating in a Rock Cut

The shovel was started on a side cut on the main line. The material for the most part was shale rock, in which blasting was necessary. The shovel was not pushed at any time. At times it was necessary to be idle for a day at a time, for drilling or other reasons. The loading was done on the main line with cars passing on a regular fifteen minute schedule. Under these conditions it was possible to load but two cars at a time, on account of the narrowness of the cut, which was 15 feet from the toe of the cut to the rail. Under these conditions a five yard car was loaded regularly in 1½ minutes and two cars in between four and five minutes, unless it was necessary to chain rocks. Through the winter months the shovel was used for double-tracking, for re-alignment, and for extensions, for the most part on the Harvey's Lake Line. At times 18 inches of frost was bucked with no trouble whatsoever. The machine was in hardpan and rock most of the time.

During the winter the company purchased six 10-yard Western air-dump cars.

The Bucyrus in Action on Harvey's Lake Line, Showing Power Line.

Handling a 3500 Cubic Yard Slide

In May, the shovel tackled a 3500 cubic-yard slide on the short line on Harvey's Lake Division. Work was started April 19th and was completed on May 8th.

The material removed was hard-pan, loosened by the action of the frost. It contained a considerable amount of gravel and small boulders. The latter running in size up to two and three cubic feet. When dry this material answered perfectly to the

On Side Cut Work

definition of hard-pan. In the winter months, the frost penetrated this slope, which varied from twenty to sixty feet in height above the track for a distance of about one thousand feet. In the spring when the frost came out, a layer of this material, averaging perhaps a foot and a half in thickness, slid down the slope, covering one of the tracks to a depth of from two to ten feet; the outside track was kept open by hand with some difficulty.

When this material was dried out somewhat, the shovel was started at the end of the slide, operating from the covered track and loading into cars on the outside track.

Two motor cars and two 10 yard all-steel Western side air-dump cars were used. One motor car was used for spotting one car, while the other motor car was hauling the other car to and from the dump. The distance to the nearest switch was about eight hundred feet and the shovel was idle while the spotting car was taking the loaded car to the switch and returning with an empty. On this account considerable time was lost.

The record of a typical days' run shows that the shovel was in actual operation 225 minutes out of a ten hour day. The material was hauled an average distance of about a mile and dumped along the fills for the purpose of strengthening the embankments, and preparing for a double track.

When the cars were dumped the bulk of the material was precipitated down the side of the embankment. A thin layer of ashes spread on the steel bottom of the cars before loading greatly facilitated this free dumping.

Although probably not more than 20% of the material excavated was actually spread by hand on the dump, yet it will be noted that this part of the operation represents nearly 50% of the labor cost.

Approximately 3500 cubic yards of this material was removed in eleven working days. The work was considerably hindered by several trees that came down with the slide, which had to be cut up and removed.

This material is particularly difficult and expensive to remove by hand, and when wet, it is almost impossible to handle by reason of it adhering to the shovels. The cost of removing a smaller slide that occurred at this location, the previous season, was approximately 50 cents per cubic yard.

The total cost of the shovel operation in this instance, as shown in the table below, including, spreading on the dumps, spotting cars, hauling and etc., was 12.15 cents, less than one quarter of the hand labor cost.

One of the principal advantages of the shovel was that the material could be handled when in a semi-fluid state, thereby making it possible to get the track in operation.

As an indication of the output obtained under these conditions, on May 4th, 23 10-yard cars or approximately 345 cubic yards, were loaded in 227 minutes, the shovel moving ahead in this time 36 feet. On May 7th, 22 10-yard cars were loaded in 225 minutes, moving ahead 40 feet on a curve. The material weighed 125 pounds per cubic foot.

We give below the cost of handling this slide as given us by Mr. Hoffman.

LABOR	per cu. yd.
Excavating and Loading	2.1 cts.
Spotting cars	1.3 cts.
Hauling and Dumping	1.8 cts.
Spreading on dump	4.0 cts.
Total Labor	9.2 cts.
Including Supervision, about	10.0 cts.

POWER	per cu. yd.
Estimate of power used by shovel is 160 K. W. hrs. per day @ 1½ cts. equals $2.40 per day or	.75 cts.
Power used by motor car hauling to and from dump— 175 K. W. hrs. per day, or	.80 cts.
Total for power	1.55 cts.

Blasting Ahead of Shovel

Repairs, supplies, etc., were negligible on this job, but assumed to average $2.00 per or 60 cents per cubic yard.

SUMMARY	per cu. yd.
Labor including supervision	10. cts.
Power, excavating and hauling (1 mile)	1.55 cts.
Repairs, supplies, etc	.60 cts.
Total	12.15 cts.

NOTE:—No allowance for interest and depreciation on equipment.

Cost of Grading Side Cut

When this work was completed the shovel was moved to a side cut where a considerable amount of rock was encountered.

This was a side hill cut about eight hundred feet long with a depth on the center line ranging from one to six feet, averaging about 3½ feet. The cut

Blast Protection on Roof

on the high side ranging from three to ten feet, averaging about six feet. The cut contained 2450 cubic yards.

The preliminary work consisted of grading a temporary roadbed parallel with and about 14 feet distant from the center line of the permanent track.

Upon this temporary roadbed the ties and rails were laid and used for hauling the material to the dump, after which the track was thrown to its permanent location.

A motor car and a Western 10-yard steel side dump car was used for hauling the material. The grade was very steep and the track in poor line and surface, necessitating slow running to and from dump.

The power on this line was weak and very unsatisfactory. It is probable that the output would have been increased at least one third, if satisfactory power had been available.

Generally the material was loam and good digging. Shale rock was encountered, however, in the bottom of the cut and about 25% of the material excavated was shale ranging from soft, easy digging to very hard.

The time required to make the cut was twelve working days during which time the shovel work was delayed forty-four hours principally by lack of power.

The material was dumped on a fill about 600 feet in length, ranging in depth from 2 to 8 feet, averaging about 5 feet.

About 200 lineal feet of crib trestle was erected over the deeper portion of the fill. On the remainder of the fill the track was laid on the original surface and gradually jacked up to grade.

The cost figures follow:—

LABOR	Total	Per cu. yd.
Grading for temporary track	$ 50.00	.0204
Moving shovel into position	13.24	.0054
Excavating and loading material	107.74	.0438
Hauling and dumping material	60.74	.0247
Building crib trestle	25.00	.0102
Spreading material on dump and raising track.	134.20	.0547
Watchman (2-3 of watchman's time charged to this job)	12.80	.0052
Blacksmith	5.90	.0024
Throwing track to permanent position	30.00	.0122
Total	$439.62	.1790
Supervision	43.96	.0179
Total	$483.58	.1969

POWER		
To operate shovel, 1260 K.W. hrs. @ 1½c	$ 18.90	.0088
Hauling material, 480 K.W. hrs. @ 1½c	7.20	.0029
Total	$ 26.10	.0117

SUMMARY	
Labor, including supervision	.1969
Power, (shovel and train)	.0117
Total	.2086

NOTE:—No allowance for interest and depreciation on equipment.

Description of Shovel

The shovel used, as stated was a 14-B Bucyrus equipped with a ⅝ cubic yard dipper. As the photographs indicate, it was mounted on railway trucks.

The shovel was designed to operate at 575 volts, D. C. The hoisting, swinging and thrust motors are of the variable speed type. The hoist is 30 H. P., the swing and the thrust each 15 H. P.

The machine weighs 19 tons in working condition.

Edward George, Shovel Engineer, to Left and His Motorman

18-B Bucyrus Digging Trench for 36-inch Water Main, Brehm Bros., Cincinnati

Trench Excavation with a Revolving Shovel in Cincinnati

How a trench for a 36-inch high pressure water main is being dug with a revolving shovel.

Brehm Brothers Construction Company of Cincinnati have under way the excavation of a trench for a 36 inch high pressure water main, and the laying of 20,000 lineal feet of pipe for the city of Cincinnati.

Work was started September first and, according to expectations, will be finished by January first of this year.

The excavation is being done with an 18-B Bucyrus revolving shovel, mounted on traction wheels, and standard in every respect except that it is equipped with extra long dipper handles, 21 feet in length, and a ⅝ cubic yard sewer dipper fitted with a mouth piece, without teeth.

The ditch for the pipe is being dug five feet wide by seven feet deep, except where railroad crossings and creeks are encountered. In the latter case the pipe is laid 18 feet under water.

The material excavated is yellow clay and stone with a sub-soil. Our views give a good idea of how the job is being handled. The ditch is spanned by heavy wooden beams resting on stringers laid beside the ditch. The shovel runs on planks laid across these beams. The manner in which these beams are handled is shown in one of our views.

The shovel averages 300 lineal feet of ditch a day, and we are told by the contractors, has dug as much as 375 feet in ten hours work. The material is used for back fill.

The contractors have met with several problems, all of which have been solved satisfactorily. Telegraph poles and trees have been encountered and steep grades and ravines have had to be crossed.

Considerable hardpan and rock has been encountered. This the shovel has had no difficulty in handling with the cutting lip without teeth, with which the dipper was equipped. The Contractors state that this work would not have been handled within the contract price by hand. In fact this method of operation has already proved far superior to any other method of excavation for water pipe ever attempted in this vicinity.

Another great advantage of shovel operation over hand labor is the ability of the shovel to dig the entire depth at one move, enabling the pipe to be laid without the necessity of opening a large ditch.

The pipe is handled by two traveling derricks, one of which is shown in the photograph on this page.

In tight places, where the derricks could not be effectively used, the shovel has handled the pipe. Each section of pipe weighs 6500 pounds.

Fifteen teams are used, with a 3-ton motor truck for hauling the pipe. The organization consists of six foremen and 125 men.

Brehm Brothers, the members of the firm being Messrs. A. J. and H. L. Brehm, have been in the contracting business in Cincinnati for the past 12 years. They have undertaken many large and important contracts, chief among which are the following:

The Cincinnati National League Base Ball Park; the new Gilbert Avenue concrete viaduct; four of the city's largest fire-proof school houses; the largest bottling plant west of New York, and many others of equal magnitude.

Operations Behind Shovel, Placing the Pipe

Coal Stripping in Kansas

By W. S. Russell

A description of Scott, Smith & White's big plant near Pittsburg, Kansas; one of the most modern coal stripping outfits in the country. In our July 1913 number, Mr. Russell described this company's plant as it existed at that time. It is now the largest coal stripping plant in Kansas.

THE largest coal stripping plant in Kansas is owned and operated by the firm of Smith, Scott & White, contractors, of Pittsburg, Kansas, who have a contract with the Central Coal & Coke Co. of Kansas City to strip and mine the coal on about 260 acres of land six miles south of Pittsburg. It is estimated that there are about eleven million tons of coal in the field. The depth of overburden varies from fourteen to thirty feet, consisting of sandy clay and shale, with occasional strata of soft sand rock overlying the coal, but streaks of this rock are found halfway down from the surface which vary in thickness from two to three feet. This rock is more or less broken and can be dug without blasting by the powerful steam shovels.

Our illustrations show clearly the whole process; the plant, the method of stripping with steam shovels, loading the coal by hand labor into tram cars, hoisting the cars out of the pit with derrick and crane, and delivering the coal to the tipple where it is screened and loaded into the railroad cars.

The Plant

The plant necessary to carry out this work is complete and up to date in every respect and required a large expenditure, consisting of steam shovels, locomotives, tram cars, tram track, engines and pumps for freeing the pit of water, tipple with shaker screens, engine house, elevated water tank, artesian well, water pipes, blacksmith and repair shops, storehouse, dinkey engine house, eating house and a number of houses for the employees all of which are put up in a substantial manner, convenient and durable for the period of eight or nine years required to work out the field.

There are three 175-B Bucyrus revolving steam shovels, weighing in working order over 200 tons each, fitted with 3½ yard dippers and having a capacity to handle 260 cubic yards of material per hour or an average of 2250 cubic yards per day of nine hours.

These shovels are designed especially for the purpose. These booms are 75 feet in length. They will dump the material 85 feet out from center of the

Operations in the Pit—Bucyrus Shovel Stripping Mining Coal and Hoisting Tram Cars out of Pit

turntable and 54 feet high above the surface of the coal on which the shovel is placed. The upper body revolves on a turntable 24 feet in diameter. The turntable base is 26 feet square, of massive construction, entirely of steel. It is mounted on four steel swivel trucks, each having double-flanged wheels 24 inches in diameter for a 36 inch gauge track. The rails on which the shovel operates weigh 90 pounds to the foot, are fitted with bridle bars in sections about 7 feet 6 inches long and form a double track.

The Plant

The shovel is selfpropelling by chain gearing to all four trucks. The truck base is fitted with a heavy steel equalizer beam across one end, having a center plate bearing in the middle and jack screws at both ends, which rest upon the trucks and by its selfadjusting movement allow the trucks to follow any unevenness of the coal surface when the shovel is moved up. The jack screws are then set tight and all four corners of the truck base is evenly supported.

The boiler, engines and machinery of this shovel are of the latest design and construction throughout. The entire shovel is of steel construction excepting the sides of the house or upper body which revolves upon the turntable base. All castings are of steel except the engines and some other parts. All gearing is of cast steel with machine cut teeth. The shovel as a whole is exceedingly strong and durable and repairs are very light.

The Operation

One of our illustrations show the steam shovel in a cut with dipper extended in the act of dumping over the spoil bank. This cut is 30 feet in depth of stripping, with 60 feet in width of coal uncovered. The derrick is in the act of hoisting a tram car out of the pit and placing it on the loading track along edge of pit upon the main ground level. In the pit are seen the men loading the tram cars. After placing the loaded car upon the track an empty car is taken from the track and lowered into the pit. The cars hold two tons of coal and the derrick will handle from 300 to 400 tons of coal per day of 8 hours which is the working time of the coal shovelers. The tipple can be seen in the distance about half a mile from the pit.

The Operation of the Derrick

The derrick shown is of the stiff-leg type, has a frame 30 feet wide mounted on flanged wheels which run on rails. The boom is 50 feet long and can be raised or lowered to suit the height of bank. This derrick requires but one man to operate it, and is an economical method of taking the coal out of the pit. A great advantage in this operation is where horsebacks are found in the coal, which are ridges of fire clay from 3 to 4 feet wide and the thickness of the coal in depth extending in various directions, either across the pit or lengthwise of it, which must be cut through or partially removed when the tram tracks are placed in the pit. This is a considerable expense, not only in cutting through the clay but in the shifting of tracks and switches.

Where the derrick is used, however, it is placed upon the coal and is moved over the horsebacks, leaving them undisturbed.

Revolving Crane and its Operations

Another illustration shows a revolving crane being used to hoist the tram cars out of the pit in another part of the field. This crane has a 60-foot boom attached to the upper body, which revolves upon a turntable base. The base is mounted on tandem wheel trucks one under each corner, which run on rails. The illustration shows the loaded tram car being hoisted onto the loading track also the men loading cars in the pit. A horseback is here shown, the men digging out the coal around it and leaving it intact.

The Tipple, Powerhouse, Tram Cars and Locomotive

Pit Equipment

There is about 3 miles of tram track of 3-foot gauge extending from the tipple to the pits. 40-pound rails are used. This track is maintained in good shape and good speed in hauling the cars is obtained.

There are two Vulcan locomotives, weighing 20 tons each, with 7x9 inch cylinders, which haul 20 loaded cars in a train, which is the result of having good track. The 85 tram cars in use were furnished by the Orenstein-Arthur Koppel Company of Pitts-

burg, Pa. They hold two tons of coal, run light and don't jump the track. A train of cars and locomotives are shown on one of our illustrations.

The Tipple and Power House

The tipple is also shown on the same illustration and power house adjoining. The tipple is 72 feet high, is constructed in a substantial manner and covered with galvanized corrugated iron. It is fitted with two cages which lift the loaded tram cars to a height of 50 feet when they dump automatically and return to the ground. The cages are operated by cables from the power house nearby. This tipple has a capacity to handle 150 tons of coal an hour or 1200 tons per shift of eight hours.

The shaker screens are of the ordinary perforated steel plate type and are operated by an independent steam engine of 15 H. P., placed in a little house at the foot of the tipple. The shaker shaft is driven by a belt from a pulley on the engine shaft. The steam for this engine is furnished from the power house.

Hoisting the Loaded Tram Cars out of the Pit with a Revolving Derrick

The power house is located close by the tipple and is covered with corrugated galvanized iron. It contains a 54 inch tubular boiler of 125 H. P. set in a brick arch. The engine is a 16x24 double cylinder mine hoist, geared to a 36 inch drum.

Within the power house is a well 907 feet deep for supplying water to the steam shovels and other machinery on the plant. The water is pumped by a four inch vertical plunger pump, made by the American Deep Well Pump Company. The necessary pressure is obtained by a steel water tank of 10,000 gallons capacity, elevated on a timber frame 38 feet high. Pipe lines are laid from the tank and pump to the coal pits for supply the steam shovels, etc.

Two Witte gasoline engines of 11 H. P. and two portable traction engines are used for pumping the water from the pits. This water comes from rain and surface drainage. There is also a seepage in some pits, located in low ground. The engines operate two centrifugal pumps and two Chinese pumps, the latter being quite generally used in this district. They are quite simple in construction and besides being cheap are easily repaired. The water is raised in a wooden trough about 4x12 inches inside and 30 feet in length, by an endless belt fitted with paddles. This belt is driven by a chain sprocket wheel at the upper end which is driven by a belt from the engine placed upon the field at edge of pit. The amount of water one of these pumps will throw is remarkable.

It may be well to explain that in coal stripping with the present type of revolving steam shovels the material is handled but once. It is dug out of the pit and deposited in the excavated space from which the coal has been previously extracted. By this means a great saving is effected over former methods of stripping with teams and scrapers.

This plant has a capacity to strip and take out under favorable conditions 900 tons of coal per shift of eight hours.

Stripping a Stone Quarry with a Revolving Shovel

The photographs reproduced herewith show Timothy Maloney's 14-B Bucyrus revolving shovel stripping a stone quarry for the Lamb Stone Quarry & Construction Co., near Delmar Gardens, St. Louis. Mr. Maloney has taken a contract to strip the quarry, the overburden amounting to about 40,000 cubic yards of yellow clay.

The material is loaded into 1½ yard wagons and delivered about three quarters of a mile away. Between fifteen and eighteen teams are used, three mules to a team.

The shovel is loading about 450 cubic yards a day steadily, and this output is expected to be maintained until the job is finished.

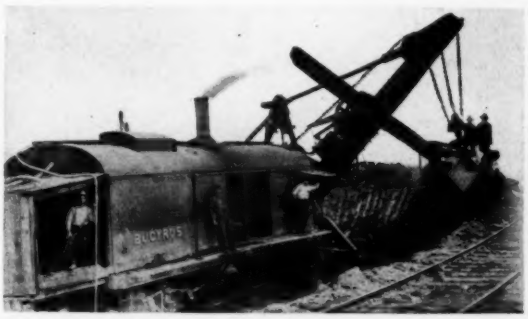
Bucyrus 14-B in Action

A short time after the shovel was started, it loaded 58, 1½ yard wagons in a period of three hours.

Mr. Maloney has been in the general contracting business for the last twenty years. He has put in numerous cellars, built many streets and plotted and laid out many acres of land in and about St. Louis. He makes the statement that the big mistake he has made is that he did not buy a revolving shovel two or three years ago.

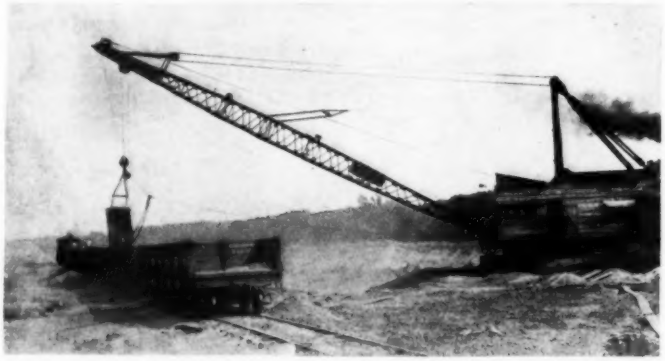
Fast Work in Shallow Cutting on the L. & N.

The photograph herewith shows Duane & Carland's 70-C Bucyrus shovel working on the L. & N. between Ansterlitz and Escondida, Ky. The shovel was operated by L. Augustine and craned by Arthur More. Mr. Augustine loaded eighty 15-yard cars the first day on the job, the shovel working only part of the time. He loaded 178 cars, with 38 six foot moves on the day the photograph was taken. The cut averaged 4½ feet deep. J. Rees was superintendent.

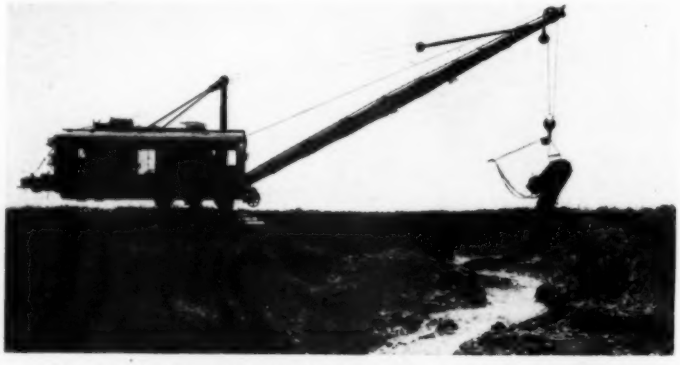


Duane & Carland's 70-C Bucyrus on the L. & N.

W. J. Newman excavating for a basement on the corner of Van Buren Street and Loretta Court, Chicago. He used an 18-B Bucyrus, equipped with an especially long boom, which enabled him to dump 18 feet above the floor and to cut over 11 feet, and at the same time enabled him to keep his wagons on the bank, making it unnecessary to haul out of the pit.



Morris, Shepard & Dougherty loading gravel for ballast for the Chicago, Milwaukee & St. Paul Railway at Sabula, Iowa. The machine, a Bucyrus class 24 dragline, made an exceptional record for itself in loading cars.



One of the two Bucyrus electric draglines digging laterals for the United States Reclamation Service at Lemp's Ranch, Pioneer Irrigation District, Nampa, Idaho. This machine dug 47,600 cubic yards in January 1914. Both machines are mounted on caterpillars and are electrically driven.

Excavating for the [illegible] Section 1, Welland Ship Canal, digging 48 feet deep in hard [illegible] 200 12-yard cars in 10 hours. [illegible] Contractors.

A 14-B Bucyrus revolving shovel digging the foundations for the new chemical building of the University of Minnesota at Minneapolis.

the foundations for a lock wall on
l Ship Canal. A class 24 Bucyrus
ep in hard material and averaging
10 hours. Dominion Dredging Co.,

The Parker Brooks Construction Company's 70-C Bucyrus shovel at work on the Greenville, Anderson & Spartansburg Ry., August, 1913. This photograph was taken when the shovel was in a rock cut, at Camp No. 1, Paris Station, S. C. B. E. Brooks was in charge of the work. This is a very good illustration of bench work.

J. D. Lynch's 70-ton Bucyrus shovel engaged in grade reduction for the Illinois Central Railroad just north of the C. C. C. & St. L. crossing at Matoon, Ill.

The Excavating Engineer

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Address all communications to the company.

THE EXCAVATING ENGINEER PUBLISHING CO.

Bradlee Van Brunt, Manager and Editor

267 National Avenue Milwaukee, Wis., U. S. A.

Construction Outlook

Contractors and others interested in an improvement in conditions in the construction field have much reason for optimism by virtue of the developments of the past few weeks. The most welcome and the most important news is the favorable decision by the Interstate Commerce Commission in the rate case. This decision has resulted in a distinctly better feeling the country over, a condition which must do much towards clearing the business atmosphere.

The Commission has allowed the roads in the official classification territory to file increases in rates of not more than 5 %. Exceptions are stipulated in rail-lake-and-rail, lake-rail-and-lake, and rail-and-lake rates and rates on bituminous coal and coke, anthracite coal and iron ore.

This of course occupies the fore front of news for the month. In addition to this we find much reason for optimism. Conditions seem to be gradually improving in a steady, healthy way. As we have stated before, the federal banking system has resulted in creating a very mobile reserve and has rendered money much easier. Bank clearings are gaining, money rates are gradually tending downward, borrowing conditions have much improved.

The increase in passenger rates should add considerably to the revenue of the roads. Exports are growing monthly and more freight is being carried by the roads. Perhaps more important yet, the attitude of the public towards the railroads has very much improved, which is indicated in a measure by what seems to be an improving market for securities. The boom has not as yet reached the contractors, although the increasing number of orders for steel by some of the larger roads seems to forecast a development in that direction in the near future.

We do not believe that we will witness a big rush of work, but we do think that conditions will improve gradually and in a healthy manner as the weeks go by. Spring will undoubtedly bring with it a good crop of construction jobs with a return to normal operations.

The Bucyrus Company Opens Western Offices

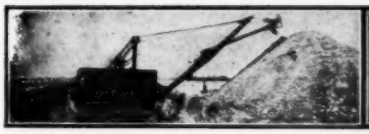
The Bucyrus Company announces two important changes in its sales organization. In order to give its customers on the Pacific Coast direct service it has opened its own offices in San Francisco and Portland. Mr. E. C. Hingston is appointed Pacific Coast Sales Manager and is located at 806 Merchants National Bank Building, San Francisco. Mr. Hingston has been connected with the Bucyrus Company for about eight years, having recently been in charge of that Company's Duluth office. The Portland office 608 Pittock Block, is under the management of Mr. L. T. Russell. Mr. Russell has been connected with the Chicago office of the Bucyrus Company and is well known in Washington and Oregon where for many years he was engaged in construction work.

A Correction

In our November number, on page 57, we published an article in regard to J. T. McCarthy & Co's work in Alabama. We spoke of his work as being on the Georgia, Florida & Alabama Railway, whereas it should have been the Gulf, Florida & Alabama Railway.

Dredge Output at Panama Increasing

As an indication of the efficiency of the organization of the Dredging Division at Panama, and incidentally of the adaptability of the new dredging equipment to the conditions there encountered, we give below the output of the Bucyrus dipper dredge "Paraiso" for the last six months. The steady increase is particularly to be noted; June 72,700 cubic yards, July 84,700, August 96,400, September 109,800, October 125,000 and November 140,000.



FIELD NOTES

DISCUSSION IS INVITED FROM MEN IN THE FIELD ON SUBJECTS HERE PRESENTED

Sectional Platforms for Dragline Work.

J. S. Whitley of Cape Girardeau, Missouri has sent us a description of a very effective type of sectional platform or track, which was designed by him and used under Hearin & Ryan's class 24 Bucyrus dragline on the Mt. Olive Levee work on the ower Mississippi. This device has proved a distinct mprovement over other types.

The sketches and photographs will serve to llustrate this description.

The section is twenty-four feet in length over-all. Ten of these sections are used, five under each side of the machine, giving a track of about 100 feet in length.

Each section consists of three 5″x16″x20′ stringers laid side by side, thus forming a roller bed four feet wide. Under these are placed ten 6″x8″x8′ standard railway cross-ties, spaced two feet apart, as shown in figure No. 1. Under these are three 2½″x16″x20′ flooring planks, to serve as a stiffner, to elevate the roller bed and to keep the mud from forcing itself up between the ties. These three sets of timbers are bolted together by thirty ¾″x13″ machine bolts with heads countersunk below the surface of the top timbers. Four one inch U-bolts in the ties serve for hooking the swinging chains.

The chief feature of the section is the staggered arrangement of the top timbers, as the sketch shows. The advantage of this is, first, to break the joint and make a more rigid connection; and secondly, to make it possible to take a sharp curve in the shortest possible space. The rollers, in so doing always have a solid bearing over the joint.

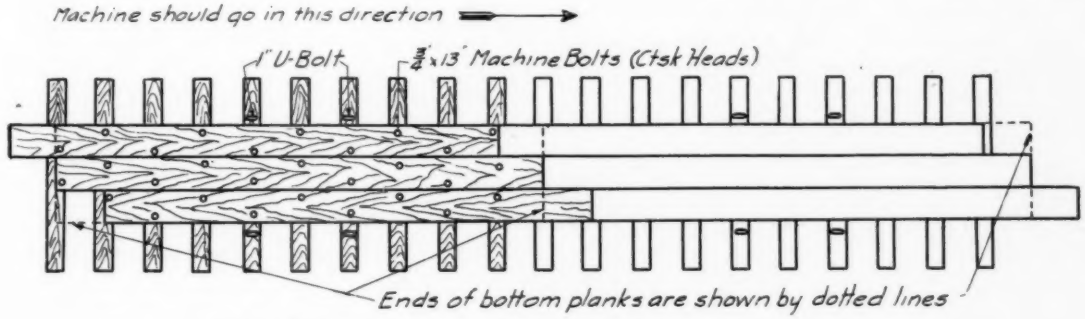
The machine can roll in either direction on these sections, but preferably in the direction of the arrow in Fig. 1. The reason is that the rollers won't strike a projecting joint, since the top timbers on the section the dragline is on project over the ties on the section onto which it is moving and the weight of the machine serves to press it down. This is especially important on soft ground. Furthermore, it is

Fig. 2. Swinging a Platform, Note Method of Hitching

easier to pick up and place the sections under this condition.

For very soft ground the bottom flooring may be extended to the end of the ties, thus giving more bearing surface.

An important point for the successful handling of these sections is the chain rigging for picking up and swinging. This is shown in figures 2 and 3. This consists of two pieces of ⅝″ chain, 3′-9″ long,


Machine should go in this direction
1" U-Bolt
¾"x13" Machine Bolts (Ctsk Heads)
Ends of bottom planks are shown by dotted lines

Top Timbers 5"x16"x20'-0" Heart Pine
Bottom Timbers 2½"x16"x20'-0" Heart Pine
Cross Ties 6"x8"x8'-0"-Std. R.R Ties

Fig. 1

and two pieces 3′-3″ long. The sketches show the arrangement. It will be observed that two of these chains, towards end B in Fig. No. 3, are 6″ longer than those hooked to end A. The reason for this is that in swinging, one end is higher than the other, thus making it easy to make a perfect joint.

All sections must be placed in the runway just as they came out. Under ordinary circumstances the act of swinging them from the rear to the front of the machine would set them wrong end for end. The long chains, therefore, should be given one-half twist. When the section is in the air, its own weight will naturally swing it to the correct position.

When the pit men put on the chains, the end nearest the operator should have the short chains so that after swinging around, the long chains or low end, is nearest the operator.

For ordinary service, two cable clamps are put on the dragline cable, 3 inches apart, and about 10 feet from the end. The large hook is hooked between these. In moving any distance the chains

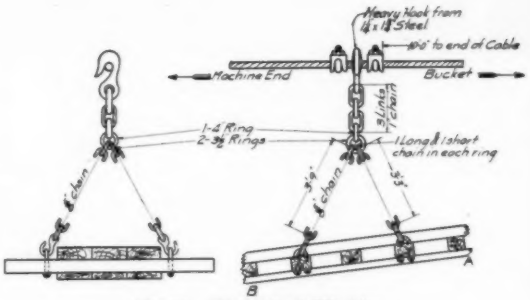
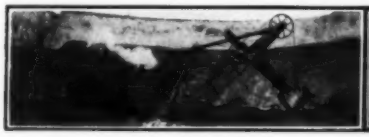


Fig. 3. Method of Hitching

are fastened to the dragline by means of an ordinary cable clamp around the shank of the hook, (see Fig. 3) thus preventing it from coming unhooked.

The sections, if properly managed may thus be swung ahead and placed in 1½ minutes each.

Mr. Whitley tells us that the sesections enabled him to move his machine 2600 feet in 10 hours, which is a record very hard to beat.



DEVICES YOU OUGHT TO KNOW ABOUT

A New Evinrude Catalogue

The Evinrude Company, of Milwaukee, have just issued a new sixty-four page catalogue describing and illustrating in detail their new types of motors and accessories for row boats, canoes, etc. Some of these types are well adapted for dredge and dragline work and consequently should be of interest to contractors engaged in this class of work. The catalogue is beautifully printed in two colors.

Change in Zelnicker Organization.

Mr. Arthur E. Jackman has been appointed manager of the machinery department of the Walter A. Zelnicker Supply Company, of St. Louis, vice Mr. J. J. Hilpirt, resigned to become storekeeper of Cia. Mexicana Depetroleo "El Aguila" S. A. at Tampico, Mexico. Mr. Jackman has had wide experience, gained as general manager of the Sea View R. R. and Narragansett Pier E. L. & P. Co., was for years in the R. & L. Dept. of the Westinghouse Electric & Manufacturing Company and latterly supt. of the East St. Louis Columbia & Waterloo Ry., which position he left to assume his present duties.

Mr. Jackman's practical knowledge of steam and electrical machinery and equipment will be found of great benefit to prospective purchasers.

REVIEW OF BOOKS and CATALOGS

We shall be glad to review in this column such books and catalogs as are sent to us. Books reviewed in these columns will be supplied by The Excavating Engineer Publishing Company at the prices named.

TROY TRUCK TRAILERS—Book 1—Pamphlet 5″x7″—16 pages and cover—A well arranged, neatly printed book, designed to show how the efficiency of the average motor truck can be increased by the use of trailers. The subject is gone into in some detail by means of drawings and sketches showing how the draw-bar pull can be used to magnify the power and capacity of the truck. Tables are given of tests illustrating this fact. The center page spread is used for a very instructive and clear diagram of the strong points of Troy trailers. This is followed by a number of graphic sketches of the reduction in costs made possible by trailers. A practical example is also given showing the cost of operation by this method.

The Troy Wagon Works Company
Troy, Miami County, Ohio.

WATSON TRAILERS—A four page circular 10″x13″, illustrating and describing the good points of the Watson 5-ton trailer. The circular contains a number of photographs of the trailers in actual use, gives a list of users and a table of specifications.

Watson Wagon Company,
Canastota, N. Y.

SHOTS FROM THE FIRING LINE

Alabama

News Notes from Birmingham

By E. L. Byron

Mr. J. R. Toney formerly of Toney & Lawler has his Bucyrus shovel loading chirt for good roads near Birmingham.

Capt. J. D. Henderson of the Henderson Contracting Co. made a flying visit to his home in Birmingham recently. He reports their N. C. work on the Southern Ry. progressing nicely.

Mr. Morrow of the Morrow Construction Co. states their work on Southern Ry. in N. C. will be finished in March. Their team work is now completed. Mr. Morrow says they have made some records with their Bucyrus shovel.

Mr. J. G. Ralston of the Marion Steam Shovel Co. was a caller at this office recently.

The mule market in this section seems to be looking up as Fies Bros. of Birmingham have been buying up all the mules available and shipping them to the war zone.

Good roads movement is beginning to be quite active in several portions of this state. Engineer Keller and associates awarded several contracts at Montgomery recently.

Newell Bros. have just recently been instructed by the Board of Revenue to proceed with their Shelby county work.

A. J. Twiggs & Son of Augusta, Go. who have an extensive levee job near Augusta and whose plant has partially been closed down since July expect to put everything to work soon after January 1st.

Mr. J. C. Carland of J. C. Carland Co. of Toledo, Ohio, a large railroad contractor made a flying visit to Birmingham and vicinity recently. He reports no big things in sight yet.

Anyone wanting a bargain in a nearly new 18-B Bucyrus revolving shovel would do well to communicate with 1250 Brown-Marx Building, Phone Main 1317.

Wetumpka—J. N. Gillis & Son, Brewton, Ala., have been awarded a contract for a 5 mile logging railroad for the Ensign Yellow Pine Co.

Arizona

A contract has been awarded by Magna Cooper Company to McArthur Bros., 11 Pine Street, New York City, for constructing a railway about 30 miles long from Superior to Webster, Ariz.

Arkansas

The Northern Construction Company of Elkhart, Ind. have two ditch jobs to sub-let, one has 170,000 yards in one ditch and the other 166,000 in several laterals. The work is adapted for a one yard dipper dredge.

California

Los Angeles and Vicinity

By G. H. Hutchinson

Mr. and Mrs. G. F. Lambert of Newton, Iowa, were in Los Angeles combining business with pleasure. Mr. Lambert is vice-president of the Parsons Trench Machine Company, and is hot after an order for one of their machines in connection with some sewer work at Long Beach. While George is trying to land the order, Mrs. Lambert is renewing acquaintances with some of her Iowa girl friends, and we are advised it is one big talk fest. There are eight of the Parsons machines in Los Angeles at the present time, and Mr. Lambert is willing to make it an even dozen.

San Francisco and Vicinity

By E. C. Hingston

Lee Moor was the lowest bidder on something like 600,000 yards of State highway work in Los Angeles County. Mr. Moor bid on this work in three ways; for completing the work in 150, in 250 or 400 days. If Moor gets orders to complete this in 150 days he will have to step some, and Moor is not like the man that can't step when it is necessary. We understand he is going to put in a steam shovel and several team outfits. We wish Mr. Moor the best of success in his new undertaking.

Temescal Rock Company of Los Angeles have for the past week been purchasing machinery for their new rock crushing plant and will soon be making dust of the mountains which are in their possession. This, we understand, is to be a modern plant with the latest machinery and we wish Capt. Fitch the best of success in obtaining his share of the rock business in his locality.

Storrie & Company are making rapid progress in prepairing the approaches for the Twin Peaks Tunnel, for which they have the contract.

Canada

Vancouver and Vicinity

The contract for grading a 186 mile extension of the Edmonton, Dunvegan and British Columbia Railway has been awarded to D. F. Mc Arthur & Company, the price being approximately $2,000,000. The section extends from Lac la Biche to Fort McMurray.

Southern British Columbia is looking forward with great interest to the linking up of the boundary valleys with adequate railway facilities, and the good progress that is being made on the Kettle Valley Railway in an assurance that the advent of better transportation will not be long delayed.

The branch of the Kootenay Central from Cranbrook to Golden was formally open last week, connecting the Crow's Nest with the main lines of the C. P. R. and traversing one of the most fertile parts of the province. Burns & Jordan, contractors.

The Department of Public Works, Canada, will proceed with the construction of a new lighthouse at Brockton Point, estimated to cost $23,000. The improvements will include a sea wall to cost $15,000. John B. Bright, contractor.

C. Brennan, one of the construction engineers of the Edmonton, Dunvegan and British Columbia Railway, is superintending the cutting of the right-of-way of a 60-mile section of the line beyond Smoky River.

The following has been announced by Messrs. Foley Bros., Welch & Stewart as the record for November in the construction of the Roger's Pass Tunnel, 26,400 feet in length through Mount Macdonald of the Selkirk Range:

East end centre heading, 588 ft. schist with some quartzite.

East end pioneer heading, 529 ft. quartzite with some schist.

West end pioneer heading, 817 ft., slate with small quartzite bands.

West end centre heading, 654 ft. slate with small quartzite bands.

The west end pioneer heading footage of 817 ft. in thirty days is believed to be the record for the American continent. It was driven down grade through rock that could not be broken over 6 ft. per round. The greatest footage in a single day was 37 ft.

At the present time the pioneer bore of the Rogers' Pass tunnel is about two-fifths completed. It is anticipated that the entire work will be finished many months before the specified time. Mr. Joseph Murphy is assistant superintendent east end, and Mr. Joseph Fowler is assistant superintendent at west end.

The third unit, on Jordan River, of the British Columbia Electric Railway Company, has been completed. This plant will develop 15,000 h. p. to be used in this city.

Steel on the Edmonton, Dunvegan and British Columbia Railway has reached Smokey River. Arrangements are being made for the continuation of construction work from there to the Spirit River settlement. Right-of way will be cut this winter in readiness for grading and steel laying in the spring.

The Kettle Valley Railway has been linked up between Penticton, B. C. and Midway and construction work is well advanced towards Princeton, where the line will join the V. V. & E., and use a joint section to Otter Summit, where connection is made with the Nicola branch of the C. P. R. Construction work is now well advanced on the Kettle Valley bridge on the line linking the new Hope Mountain route with the C. P. R. on the north side of the Fraser. Grading has also been completed on the Hope-Coquahalla Summit section of the Hope Mountain route, and it is anticipated that the new line will be ready for traffic to the coast next summer.

The Pacific Great Eastern Railway has now a force of nearly 7,000 men along its route between Squamish and this city, and it is expected that the entire route will be graded before the close of the year. Track will extend to Lillooet by the end of January, and it is hoped, to Clinton, by June. The entire line should be completed from tide water to Fort George by the close of next season.

Traffic to the coast by way of the Kettle Valley Railway will likely be accommodated next summer. The Kootenay Central Railway is also well on the way to completion, the swing bridge over the Columbia River, near Lake Windermere, having recently been put into position. Construction on this line has been carried on northwards from the Crow's Nest line and southwards from Golden, and the two sections will meet at the Columbia River bridge.

Fred D. Nims, electrical engineer and general superintendent of the Western Canada Power Co., Limited, is leaving the service of that Company to accept a position with the Olympic Power Co., of Port Angeles, Wash. Mr. Nims deserves special mention for his successful efforts to form a section in Vancouver of the American Institute of Electrical Engineers. Mr. Nims is a member of the standing committees of the Institute.

Winnipeg, Man.—The Hudson Bay Ry., which is building from The Pas, Man., northeast to Port Nelson, on Hudson Bay, about 420 miles, is now at work on the section from mile 214 to mile 293. J. D. McArthur, Winnipeg, Man., is the contractor. The final location and survey has been completed from mile 273 to Port Nelson, a distance of 131 miles.

Norwood Grove—C. W. Beardsley has been operating a Bucyrus shovel here for the Hudson Bay Construction Co.

Notes from the Welland Canal

By John G. Beck

The St. Catharines City Council has awarded the contract for a steel superstructure to bridge on St. Paul St., to the Canadian Dredging Co., Walkerville, Ont., at $85,420. The bridge will be steel construction, 1236 feet long, 41 feet wide and 89 feet high.

Stein & Reade have closed down their Atlantic steam shovel plant for the Winter after a very successful season. "Charlie" Stein will spend the Winter blinking at the bright lights on the Great White Way, while "Lean" Reade will go into Winter training quarters at Bowmanville, Ont. Leon is the champion light weight dirt mover of the Welland Canal District, while Charlie holds the same title as a pool player at the St. Catharines Club.

Our attention has been called to what appears to us a record for loading cars with a dragline. Yale & Reagan have a dragline excavator which loaded two hundred and eighteen 12-yard Western air-dump cars in 10 hours, including lost time, switching trains, etc. The machine is a standard class 20 Bucyrus equipped with 85 foot boom and 2½ cubic yard bucket. We believe this is a record for this size machine, however, if any one thinks they have it on us, we would be very glad to hear from them.

The Dominion Dredging Co., have succeeded in raising the dredge Delver, which was swamped off Port Dalhousie Harbor early in the season.

Baldry, Yerburgh & Hutchinson have discontinued water tight embankment work for this season on account of the freezing weather.

The Confederation Construction Co. have also discontinued this class of work for the season.

Mr. Burton St. John of Montreal spent a couple of days with us this month. We understand he has disposed of his big Alco car and will be in the market for a machine in the Spring. He says he prefers the Ford, for the reason that you do not require a speedometer to register the speed at which you are running, but can tell by the touch and rattle. When you can feel the breeze blowing you are going 15 miles per hour. When the lamps begin to rattle, 20 miles and when you begin to lose parts along the road, 28 miles.

Considerable interest has been shown in connection with the organization of the St. Catharines Home Guard, especially by Messrs Baldry, Yerburgh & Hutchinson, general contractors for Section No. 2, of the Welland Ship Canal, who have recruited a company, 122 men strong, from their employees.

This company, which is a complete unit in itself, known as Baldry, Yerburgh & Hutchinson Company, is divided into two sections, the city section, composed of men employed on Section No. 2, living in the city, and the works section, made up of men employed on the section, living in the camp.

The two sections form a complete company, No. 2 Company, St. Catharines Home Guard. Any man over 30 years of age, employed by the Baldry, Yerburgh & Hutchinson Co. is eligible to membership.

The organization is absolutely voluntary on the part of the men and it is interesting to note the interest which the men are showing to make the Baldry, Yerburgh & Hutchinson Company a credit to its organizer, Mr. W. H. Hutchinson.

Mr. Hutchinson has had installed a concrete floor in one of the large buildings at the camp, which is to be used as a drill hall, where the members of the comapny will receive instructions in the manual of arms and company drill.

In addition to this there will be a miniature rifle range, which will be open evenings for rifle practice.

Toronto and Vicinity

The Canadian National Clay Products Association will hold their annual convention at the King Edward Hotel, Toronto, Jan. 26th, 1915. Mr. J. S. McCannel, president of the Milton Pressed Brick Co., Milton, Ont., is scheduled to deliver a paper "Steam Shovels for Handling Shale and Clay." Mr. W. W. Pearse, City Architect of Toronto, is also scheduled to adress this convention.

The ratepayers will be asked to decide the following questions at the January elections;

Hull, Que., by-law to raise $100,000.00 for water works extension. Brantford, Ont., $100,000.00 for completion of water works plant. Guelph, Ont., by-law to authorize expenditure of $125,000.00 for addition to the Collegiate Institute.

Messrs. Quinlan & Robertson of Montreal, have been awarded the Bloor Street Viaduct contract, by the Toronto City Council, at $947,076.00.

The Randolph Macdonald Co. are getting nicely started with their Trent Canal contract at Washago, Ont. They have installed a Bucyrus class 24 dragline, which is doing excellent work loading 6 cubic yard cars. Mr. C. H. Flynn of the Bucyrus Co. erected the machine and ran the test.

Cedar Rapids, Quebec—The accompanying photograph shows Frazer, Brace & Co's 70-C Bucyrus shovel at work near Cedar Rapids. The machine is operated by "Big" Tim Hansberger. It is at present in a rock cut. It succeeded in turning out between 30 and 31 thousand cubic yards of rock in May of this year.

Colorado

Denver and Vicinity

By H. N. Steinbarger

It is with a great deal of regret that we learn of the sudden death, about December 15th, of Mr. Patrick Gibbons, late of Salt Lake City. Mr. Gibbons was one of the old school railroad contractors known by many all over the country and beloved by all who knew him. Although he was of rather advanced age, 81, his death was not anticipated for several years to come, as until the last he was quite active in the management of his affairs at home and apparently enjoying the best of health. He amassed a considerable fortune in railroad contracting, and several years ago turned the business over to his sons, Thomas and Albert. His death will sadden the hearts of many good old friends throughout the country.

John Crook of the firm of Young & Crook of Denver has returned from an extended trip to California. He went there immediately after the Burlington work near Guernsey, Wyo. was closed down, in order to get a much deserved rest. He reports that little construction is under way on the Coast, but much planned and looks for an early resumption in all lines in the near future.

P. J. O'Leary of Denver has just taken a sub-contract under Wood-Bancroft & Doty on the Atchison drainage district No. 1, near Muscotah, Kansas. The contract covers approximately 290,000 cubic yards of ditch excavation. The main contract consists of about seven miles of canal, which will straighten the Delaware River. The canal will have a 20 foot bottom, a depth of 20 feet, banks 1 to 1 slope and a berme of approximately 45 feet on either side. Mr. O'Leary will move his three-yard dragline excavator on the job from Wyoming, where he last used it on the new Gulf to Seattle line of the Burlington.

T. J. Morgan of Denver recently landed a little rock work near LaMadera, N. Mex. It will be the finishing touch to a branch line being built by the Halleck & Howard Lumber Company of Denver. The line will serve as a feeder to the new line of the Denver and Rio Grande Railroad recently completed by Charlie Wells of Denver. A great amount of timber will be handle to the mills and finished lumber from the mills to the trade. About 25,000 cubic yards of rock will be excavated by Mr. Morgan.

One of the most active contractors in the inter-mountain section is John Nash of Denver. In fact he is the most active at this time that we know of. He is a specialist in concrete construction and pile driving and has been busy almost all of the present year in face of the dullest times ever known in the rocky mountain district. He has just closed down for the winter a big concrete job on the big dam of the Hawks Springs Development Company near Guernsey, Wyo. From last report we believe he bids fair to get a good sized pile driving job for some structures being built by the Denver Reservoir Irrigation Company. Here's luck to Johny, a Merry Christmas and another big year in 1915!

There is still no good news regarding resumption of work on the Burlington line in Wyoming. About seven contractors who were at work on this line have come to the belief that "war is hell" and for everybody.

Robt. Russell was very active during December in subletting a considerable amount of bridge flume and pile driving work on the Platte Valley Canal of the Denver Reservoir Irrigation Company project in Colorado. He had the contract for the entire system, which is practically all completed.

The "Davies Pitch Club" of Denver has had "some time" in perfecting the re-organization for the winter's series of events. It took Jim Davies a month to get enthused. Said his arm is too short—Can't reach far enough to get the fruits of his labor. When he finally decided to "get in", the other members held a council of war and refused to play until Jim fixed the big table. —Fixed that up O. K. Then a few choice members got their heads together and voted unanimously against the tab game—Result: We have not heard any more than two members sitting in at one time since the opening of hostilities—Why? Christmas has just cleaned em out. We do not care to go on record with any other and more pointed statements. By the way ask Frank Hoffman "ex-officio chief pitcher" what he thinks of the tab game. He calls it a "pad" game, swearing that the rolls were padded when the members voted to cut out the tab. He could'nt lose when the tab was in good favor last summer. He went off contracting recently happy in the thought that he had a good balance on the right side of the ledger, only to return to find the ledger a thing of the past. Nothing but "profit and loss" left. The "promissory plan" was abolished and all promises to "Hoffman" abolished with it. He still holds the promises.—Can't use them—Can't negotiate alone on them and can't play unless he shows the stuff that counts, and every time he shows it they take it away from him.—Conspiracy of some kind he says.

Florida

Zellwook—Furst-Clark Construction Co., of Baltimore, Md. has been awarded a contract by the Zellwood Florida Farms Co., for the draining of about 20,000 acres of low lands in Lake and Orange counties, near Zellwood. The contract calls for the excavation of about 1,000,000 cubic yards of material.

Georgia

Gainesville—Stewart & Jones, Rock Hill, S. C., have been awarded the contract for 6½ miles of new line in connection with the plan for rebuilding and double-tracking the Charlotte-Atlantic line of the Southern Ry. About 4 miles is near Mt. Airy and 2½ miles near White Sulphur.

Kansas

Pittsburg and Vicinity

By W. S. Russell

The cold weather of the past month has stimulated the demand for coal and shipments have increased. Some rush orders are being filled and with the prospects of a cold winter the general opinion is that there will be a steady absorption of the production of the mines. Prices are the same as last month and we quote as follows: lump per ton $2.25, nut per ton $2.00, mine run per ton $1.75, mill run per ton $1.60, slack per ton $1.35, F. O. B. railroad cars at the mines.

We note from reports from the Illinois coal fields that owing to the increased demand, steam coal prices have advanced from 10 to 15 cents per ton with prospects for a further increase. Many factories and industrial plants have either resumed operations or increased their working forces, which adds to the general consumption.

The situation in the Pittsburg coal fields is quiet with the exception of strikes at several of the deep-shaft coal mines over trivial matters that are of small consequence and do not effect the general business.

The coal stripping steam shovels are practically all working. Some of them are on double-shift so as to keep up with their orders.

There are comparatively few idle men in the Pittsburg district outside of the striking coal miners. The holiday season was well enjoyed, judging from the good natured crowds of people seen on the streets and the stores were well patronized.

Pittsburg is well supplied with theatres and moving picture shows, two new ones having been built during the past summer making five in all including the Orpheum Theatre which is of good size and a credit to any city.

The monster Bucyrus steam shovel, class 225B, expecially designed for stripping coal for the Carney-Cherokee Coal Company, is now in operation 2½ miles north of Mulberry, having proved to be a great success. It has beaten all records for handling earth in stripping coal. The shovel is working in a box pit in 20 feet of overburden, in covering 82 feet in width of coal, dumping it all on one side at the rate of over 5000 cubic yards per day—this being about double the capacity of any other coal stripping shovel built. It is quick in action having a working speed of two dippers per minute, runs smoothly without any perceptible trembling or vibration, owing to its massive construction, and is handled by two men as easily as an ordinary railroad steam shovel. This shovel is of the revolving type and weighs over 300 tons. It is fitted with a 75-foot boom, a 6-yard dipper holding 7 yards heaped up, and will handle 40 feet in depth of stripping at no greater expense per ton of coal uncovered than the smaller shovels are doing in from 20 to 25 feet in depth.

This shovel will enable deeper coal to be mined which will increase the area of coal stripping operations.

The Moka Coal Company of Pittsburg are operating two Bucyrus steam shovels stripping a field of 290 acres about a mile south of Mulberry. The first one a class 150B, having a 2½ yard dipper, was installed a year and a half ago and has been working steadily ever since. The second one, a class 175B, having a 3½ yard dipper was installed in October and started to dig early in November. The overburden is 20 feet in depth and is easily handled by the shovel at the rate of 2500 cubic yards per day of nine hours. The coal is in good demand. Lee Bigley is superintendent of field operations.

The Whitmer Contracting Company of Pittsburg are operating a model 271 Marion steam shovel on a field of 300 acres just west of Frontenac, about 3 miles north of Pittsburg, stripping coal for the Santa Fe Railroad. The overburden runs from 20 feet to 38 feet in depth over a 3 foot vein of coal. The stripping consists of blue shale and sandy clay. A first class up to date plant has been put in, consisting of tipple with perforated shaker screens, power house, repair shop, store house, pumps, water pipes, tram cars, tram track, Davenport locomotive and a revolving crane for handling the cars out of the pit which has many advantages over the old method of placing the tracks in the pit. The revolving crane is placed on the coal and the loading track up on the main ground level near the edge of the pit. This plan has been adopted by two other coal stripping firms with good results and two more firms are using a revolving crane placed upon the main ground level which handles the train cars out of the pit in a similar manner. D. H. Whitmer, formerly of Philadelphia, Pa., but now a resident of Pittsburg, is general manager of the plant and is a contractor of large experience in railroad work and general excavating. Their contract will require about twelve years work to complete with two steam shovels.

The Patton Coal and Mining Company of Frontenac are working every day with their model 251 Marion steam shovel on a field of 320 acres stripping coal under contract for the Santa Fe railroad. The overburden is from 14 to 16 feet in depth consisting of sandy soil with about a foot of black slate overlying the coal which is handled by the steam shovel without any trouble. This slate breaks out in cakes from 6 feet to 20 feet long by 4 feet to 6 feet wide and a foot thick. It is interesting to watch the shovel lift the big pieces and deposit them over in the spoil bank. The coal is 2 feet thick and is free from horsebacks. Earl Patton is in charge of field operations.

The W. W. Patterson Coal Company are operating a model 250 Marion steam shovel on a 220 acre field at Alston on the Frisco railroad. The overburden runs from 16 feet to 22 feet. The coal is 3 feet thick, W. W. Patterson has personal charge of the plant. Their office is in the Commerce Building, Pittsburg.

The D. H. Markham Coal Company are stripping a field of 160 acres near Durranville on the Kansas City Southern railroad. This firm is operating a class 150B Bucyrus steam shovel which was the first shovel of this Company's make to be installed in this field nearly 3 years ago. C. H. Markham is general manager with a sales office in the Commerce Building. Mr. Markham is president of the Interstate Coal Company. Their office is also in the Commerce Building, Pittsburg, Kansas.

Mr. E. J. Scott of Smith, Scott & White Coal Stripping Contractors, came down from St. Louis recently and spent 4 or 5 days at Pittsburg looking over their coal stripping operations.

Ira M. Fleming, president of the Fleming Coal Co., at Kansas City, was in Pittsburg for a few days last week.

Frank Gorman, general agent for the Excelsior Powder Company at Kansas City, was a recent guest at the Stilwell Hotel looking after business.

Robert Neill, chief engineer of the W. S. Dickey Clay Mfg. Co., of Kansas City, spent several days at Pittsburg recently, a guest at the Stilwell Hotel.

E. S. Nevius, manager Nevius Coal Company, was at Pittsburg a day or two last month.

The Besse Cockrill Coal Co., at Weir City, are offering their model 28 Marion ¾ yard revolving steam shovel for sale. This shovel was used for loading coal in their strip pit. Owing to unfavorable conditions its use was discontinued.

There are good opportunities for parties having means to engage in coal stripping in the Kansas field. Strip coal land can be bought or leased at reasonable prices. Further information will be furnished by the Pittsburg Machinery Company, 806 North Broadway, Pittsburg, Kansas.

The Bucyrus Company have a stock of repairs for their coal stripping steam shovels at the Pittsburg Machinery Company store room which is a great convenience to owners of Bucyrus steam shovels. Give them a call.

The Pittsburg Machinery Company are located at 806 North Broadway where they occupy an entire building with a large stock of coal miners, mill, railroad and contractors supplies, tools, machinery, engines, boilers, pumps, motors, etc. for either steam, gasoline or electric. Also repairs for Bucyrus steam shovels. John Frain or W. L. Sullivan are always on hand to look after the interests of their customers.

Muscotah—A contract for excavating 648,000 cubic yards for 23 cutoffs in Delaware River, 8 cutoffs in Straight Creek and 8 cutoffs in Elk Creek has been awarded to Wood, Bancroft & Duty, Omaha, Neb., at $63,504.

Kentucky

Eddyville—Robert Collonach is running an 18-B Bucyrus for Joyce Bros. & Bagwell, general railroad contractors, at this point.

Grand Rivers—Boyd Nickals is running a Marion 60 for Joyce Bros. & Bagwell near Eddyville, Ky. The work consists of changing of grade on the Illinois Central work.

Massachusetts

South Bridge—Ed. Norris is operating a 70-C Bucyrus shovel for the Power Construction Company on their Power Canal at Monroe Bridge.

Missouri

Hannibal—Phil. Rouse has recently completed the erection and test of an 85-C Bucyrus steam shovel for the Portland Cement Company in their quarries here.

Massachusetts

Boston—A short time ago, a suit was instituted against the Wellesley Gravel Company by a nearby resident for damages caused by dust which originated from the operations of the gravel plant and the stripping of the loam from the deposits, etc., and also an injunction against the operation of the plant on account of the noise and other nuisances caused. This suit was largely advertised at the time. On December the 8th a decision was handed down in the Superior Court of Suffolk County to the effect that not injunction against the present use of the defendant's premises should be granted and no damages should be given. It was held that the Wellesley Gravel Co. not only gave due notice to the plaintiff as to what use to which the property was to be put, but also has not operated the plant in and objectional manner.

Minnesota

Minneapolis—The Minnesota, Dakota & Western which operates a line from International Falls, Minn., to Nakoda, also to Pelland, Laurel and Loman, has given a contract to the Minnesota & Ontario Power Company to build an extension from Littlefork, south to Craig, 45 miles.

Minneapolis—A contract has been awarded to A. Guthrie & Co., St. Paul, Minn., by the Minneapolis, St. Paul, Rochester & Dubuque Traction Company, for constructing a cut-off from Minneapolis River to new terminal in Minneapolis.

Bemidji—A contract has been awarded to the Minnesota Drainage Company, Baudette, Minn., at $50,092.98 for constructing judicial ditch No. 24; this will be 30 miles long and include 206,200 cubic yards excavation.

Another contract was awarded them at $24,612.66 for constructing judicial ditch No. 22, which will include 93,682 cubic yards excavation.

Missouri

St. Louis Items

By A. J. Michel

25,000 idle laborers in St. Louis.

Little or no railroad work in sight. We have the usual optimistic view for spring however.

The soup houses in St. Louis are doing a flourishing business.

Geo. Williams was very fortunate. He placed his 5-team outfit on the Wabsah at Wellsville, Mo. this week. He will have work that will hold him until March.

C. S. Jones received an extension of his contract on the Wabash which will give a few more stationmen work for a couple of months.

W. E. Smith formerly superintendent of construction L. & N. Ry., Louisville has been assigned to the duties of superintendent St Louis division L. & N. with headquarters at Evansville, Ind.

W. H. Thompson has six fine teams idle. His address is 333 Pennsylvania Avenue, University City, St. Louis.

E. D. White, an A. No. 1 superintendent of any kind of construction work is idle. Dow, Ill., will reach him.

M. Federer located at 4100 Gravois Avenue, St. Louis has 6 teams and outfit idle.

W. J. Martin and J. Applegate, for many years with the Patton & Gibson Construction Co. spent a few days in St. Louis. They are still the P. & G. Co. however during the last two years while there was nothing to do for this immense outfit which consists of 10 steam shovels, and a corresponding number of standard cars etc. they have formed the United Engineering and Construction Co. and are doing very good. They have a water works and conduit contract ta present at Kensett, Ark.

The Gist Bros. Construction have a steam shovel outfit for sale. One 70-ton Bucyrus, 3 Ingersoll drills, stationary boilers, 5000 feet pipe 2 and 4½ inch, one spreader, standard gauge, blacksmithing outfit and other tools and articles too numerous to mention.

This is located at Mullens W. Va. Their home address is Oak Park, Ill.

$1.25 and $1.35 per day are the prevailing wages for common laborers and in the event of an order it would be necessary to have a man with a club to keep the mob in line. "Prosperity"!

L. E. Mitchell with the O'Boyle Brothers Construction Co. Canada, is spending the Winter in St. Louis. Mr. Mitchell seems to think there will be a good deal of work throughout Canada the coming Spring and Summer.

Zay Gardener the well-known track-laying contractor on the Frisco and M. K. & T. R. R. spent a couple of weeks in St. Louis with his family.

He has just completed laying 327 miles of rail for the Frisco. He expects a large contract that will keep him busy this summer commencing about April 1st.

"Cap.", as he is called by the negros, which class of labor he employs exclusively, had a "soup and bread line" of his own while here.

When a few of his niggers found out he was here and came to our office each day, they would form a dinner and supper line which at times would number 100 men. This lasted 10 days. None went away hungry.

P. J. Murphy has a small steam shovel idle. He can place same on very short notic as it is ready and in first class order. Address him Moberly, Mo.

McCann Brothers Construction Co. wish to hear from anyone having work to let. They are prepared to handle anything in the railroad or construction line. They also operate the Grand Tower Stone Co. Address them Grand Tower, Ill.

W. J. Pattee, has a lot of commissary outfits and accessories for sale. 101 S. Commercial St., St. Louis.

Labor of all kinds is plentiful.

Montana

Great Falls—Bates & Rogers Construction Co., 206 Lindell Blk., Spokane, Wash., at 839,940, were low bidders for the construction of the Pishkun reservoir supply canal, Station 8-60 to 38-53.

Butte—A contract has been awarded the Montana Power Company, Butte, Mont., by the Chicago, Milwaukee & St. Paul Railroad Company, to complete the electrification of the line from Three Forks and Deer Lodge, Mont.

New York

Albany—David Chambers has been craning a Bucyrus shovel for the Walsh Construction Company here.

New Jersey

Camden—The contract for grading and track work at Camden, N. J., for the Pennsylvania Company has been awarded to James McGraw Company, Commercial Trust building, Philadelphia, Pa.

Ohio

Toledo—L. Augustine is with J. C. Carland here. He is operating a dragline excavator on a job which this company has for an addition to the Overland Automobile Co's plant. The work consists of straightening out a creek and excavating for a new building.

Pennsylvania

Philadelphia and Vicinity

By E. J. Lewis

Thomas Connor has a fifty thousand yard excavating job on York Road consisting of new street grading for the City and lot grading for private parties. Robt Ballinger is operating the Bucyrus 14-B on the work and James Mannion is setting up a new Bucyrus 18-B. James Conner carries the "big stick" and assisted by his five brothers, who wield good sized shillalys themselves you find an organization that is hard to beat.

James L. Doak of Media is doing a piece of work for the Springfield Reality Company at Saxer Street on the line of the Philadelphia & West Chester Traction Companies line. This work comprises about forty thousand yards of earth excavation and Mr. Doak is exerting every effort to clean up before the snow flies.

Tommy Lee the West Philadelphia contractor has just put his Thew shovel in on a newly acquired street job in West Philadelphia. The cutting through of 47th street from Spruce street south.

James F. Brogan's work on the Pennsylvania at Mt. Union Pennsylvania has been "temporarily closed down". This order necessitates the shutting down of his 70C Bucyrus shovel.

Thomas Clasby is doing considerable street work in the vicinity of Willow Grove turn-pike and Chelton Avenue. This work is in charge of John B. Clasby.

Many new transit lines are promised Philadelphians and the contractors are patiently waiting and hoping that a move will soon be made and that bids will soon be asked for a large portion of this work, which will consist of a subway line out Broad Street and many lateral lines. At the present time the City is experiencing the usual delays due to various argumants as to which and when and why. And still we all have hopes.

The present weather conditions seem to indicate that the contractors who were recently awarded snow cleaning contracts will soon have to get busy.

The New Year is too much of a youngster to make many predictions as to how much of a man he will eventualy develop into and we may have to sit up nights with him for a while to bring about that development, but most of us are willing to loose a little sleep to accomplish this, so here's wishing that each and every one of our readers may enjoy great happiness in his bringing up and that they will each and every one be eminently successful throughout 1915.

Notes from Pittsburgh

By Leonard and Rumbarger

The Somerset Contracting Company was recently awarded contract for reconstructing 13,193 feet of brick block pavement in Beaver County, Penna. They have purchased a new 14-B Bucyrus revolving shovel to do the excavating. It will be in charge of D. W. Kirkland. We can expect great results when "Kirk" is operating a shovel, as we are told he is the best in the business.

J. C. Barr, general manager of the Pittsburgh Steel Ore Company paid us a visit while in Pittsburgh this month. He advised that everything is fine on the range in Minnesota.

K. S. Macteer, superintendent of the Hoosac Tunnel & Wilmington Railroad Company was in Pittsburgh last month. He reports that everything is fine in and around Malone, N. Y. We hope that he will return soon again, as there will be better shows in town the first of the year.

The Pittsburgh Plate Glass Company have started excavating for their new plant at Clarksburg, W. Va. C. W. Allen has the contract for the excavating. Mr. Allen is one of the leading contractors around Clarksburg. No doubt this part of the job will be done in first class shape.

The Duquesne Contracting Company have completed their contract at Elgin, Pa., which was excavating and building eleven miles of railroad for the Pennsylvania Railroan Company. W. M. Douglas, superintendent of the job thinks with many others that it is the best ever built. We are told that on the officials' inspection trip this track was subjected to a speed of fifty miles per hour.

Monaca—J. J. Dorgan has recently completed the erection of a 14-B Bucyrus revolving shovel for the Somerset Contracting Company here.

Philadelphia—A contract has been awarded J. A. Vandergrift Company, New York City, by Berks & Lancaster Railway Company, for constructing 6½ miles of its line from Kleinfeltersville to Womelsdorf.

Pittsburgh—Grading work is about finished on the Chartiers Southern Ry. and the bridge masonry and tunnel work have been completed on the line from a point near Eighty Four, Pa., south to a point near Marianna, 10.27 miles, but further work has been indefinitely postponed. Contracts were let in 1913 to the Brocklehurst & Potter Company, New York, to build the line. E. V. Braden is engineer, Pittsburgh, Pa.

Tennessee

Memphis—The Board of Supervisors of Washington County, Mississippi, received bids for the construction of eighteen steel bridges of from 32- to 70-ft. span, and for three wooden bridges, on January 4, 1915, at Greenville, Mississippi. The Morgan Engineering Company of Memphis, Tennessee, who are the engineers for the Bogue Phalia Drainage District, are furnishing the plans.

Memphis—Following contracts were awarded for about 800,000 cubic yards levee work in upper and lower St. Francis and White River levee districts: W. M. Dodson & Kast, Gerald, Miss., for 175,000 cubic yards at 8.25c per cubic yard, located in Upper St. Francis levee district; C. C. Aderholdt, Friars Point, Minn., for 200,000 cubic yards at 11 cents per cubic yard, located in Lower St. Francis levee district; Roach, Stansell, Lowrance Brothers & Company, Memphis, Tenn., for 280,000 cubic yards at 10.8 cents per cubic yard, located in Lower St. Francis levee district and 90,000 cubic yards at 8.7 cents per cubic yard in White River Levee district; R. L. Leonard, Memphis, Tenn., for 60,000 cubic yards, at 15 cents per cubic yard, located in White River Levee district.

Texas

Von Ormy—Geo. Stanbery has recently completed the erection and test of a Bucyrus class 9½ dragline excavator for J. P. Nelson Company in a gravel pit near here.

Houston—Contract for constructing drainage canals, 44 miles in all, has been awarded to J. B. Arpin Dredging Company, Binz Building, at approximately $140,000.

Utah

Provo—The Department of the Interior, Washington, D. C., has accepted the following bids for building 10 miles of the Strawberry Valley Project, high line canal from the diversion dam at Spanish Fork to Payson, 10 miles: Mendenhall, Straw & Bird Construction Co., Springville, first schedule, three miles, $47,465; Rideout & Andrus, Draper, second schedule, four miles, $25,898; McArthur Bros., New York City, third schedule, three miles, $37,075.

Salt Lake City and Vicinity

W. H. Olin, commissioner of agriculture for the Denver & Rio Grande Railroad, and D. C. Welty, who holds the same position for the Missouri Pacific Railway, passed through Salt Lake City recently after having made an inspection of the line of the proposed extention of the Gould lines, connecting Ogden with Winnemucca, Nev. and Boise, Idaho. It is believed that this is a sign that extensive construction work is to be expected on this line in the Spring.

The Skull Valley Indians are building a section of the Lincoln Highway through their reservation in Tooele County, 26 miles from Salt Lake. An extensive investigation has just been made of the King Hill Irrigation Project in Idaho, for the purpose of determining whether the Government shall take it over. This project and its extension, which is controlled separately, is located near King Hill and Glen's Ferry, Idaho. Since their beginning, both have been involved in litigation, a trouble due to the nature of the country, which necessitated side hill construction.

Virginia

Richmond and Vicinity

By J. G. Skelton

Stewart & Jones of Rock Hill, S. C. have been awarded six and one-half miles of double-track work on the Southern Railway near Mr. Airy, Ga., and two and one-half miles near White Sulphur, Ga. The excavating will be heavy and the contractors will begin work immediately.

Arizona

The Hassayampa River Water Users Association, with headquarters at Phoenix, have an irrigation project under construction, consisting of 30,000 feet of 30 inch concrete pipe, 164,000 yards of dirt to move into dam for reservoir, 4,000 square feet sheet steel piling to be driven in river for diversion dam, 624 yards of concrete to be put in place, and 22 miles of ditches and canals. The ditches and canals are now built, but the other work is yet to be done. When this work is complete it will furnish water for 15,000 acres of land. They now have more applications for water rights than they can fill.

The land to be watered is 25 miles from Phoenix, on the Santa Fe Ry. and this association is putting on a town site near the center of the lands to be irrigated.

The Association is very anxious to get in touch with the contractor who is willing to take a chance in order to get a contract at a good long price where he can make some money. They write in reference to this as follows:

"What we want a contractor to do is to put the diversion dam in the river, drive 4,000 square feet steel sheet piling and put 300 yards of concrete in place on top of sheet piling, and this would cost him less than $5,000, for everything, labor and all, and while this work was going on we could begin to collect money on water rights; also it would help us when the stock buyers came on to investigate, so that really the contractor is not taking any chance, as we have a bunch of stock sold and have the notes for the same payable monthly. Now we will give the contractor a lien against all our rights away, water rights, and ditches already built, and put up the notes we have to secure him.

This association has employed Mr. Howard S. Reed as engineer in charge. Mr. Reed was in charge of the construction of the Roosevelt Reservoir for the Salt River Valley Project. This project of ours has been carefully investigated by the best engineers we have in the south-west, and is considered a very safe proposition. Now the contractor who would help us out in building this diversion dam, we would give him the balance of the contract at a big long price, and would at that time have the cash on hand to pay him."

Any one interested, should communicate with the Hassayampa River Water Users Association, at Phoenix.

The Mascot & Western Railway Company, John A. Street 1611 Harris Trust building, Chicago, Ill., is interested in work to start next spring for constructing a proposed railway from Kelton to Mascot, distance about 35 miles.

Arkansas

Arkansas Mining & Development Company, expects to let contracts early in 1915 to build an electric line from Hoxie, Ark., west via Portia, Black Rock, Denton, Smithville, Nelsonville,

Poughkeepsie, Evening Shade, Zion, Lacrosse, Melbourne and Newburg to Calco Rock, 72 miles. A branch is also projected from Nelsonville southwest via Shelbyville and Cave City to Batesville. The plans call for building a total of about 130 miles. J. W. Myers, Nashville, Ark., may be addressed.

Canada

The Canadian Northern is making surveys to build an extension from Huberdeau, Que., to St. Remi, eight miles.

It has also projected a line from Toronto, Ont., to Thorold and Niagara Falls, Ont., 79.63 miles.

An interurban railway from Edmonton to Pembina River is a scheme proposed by the Edmonton North-Western Radial Railway Co.

The Athabasca, Grand Prairie & Peace River Ry. Co. will apply to Parliament for an act authorizing the company to construct 400 miles of railway in Alberta and British Columbia.

Colorado

The United States Reclamation Service, Montrose, Colo., will receive bids until January 5th for constructing Lower Selig Extension Canal and laterals. Will involve about 117,300 cubic yards excavation in open cut.

Illinois

The Supervisors of the Fabius River Drainage District, J. H. Best, Illinois State Bank Bldg., secretary, will receive bids until 9.30 a. m. January 20th, for the construction of the levees and ditches and diversion channels for the district. There are about 2,000,000 cubic yards of ditch and channel excavation and levee fill. The work will be divided into seven principal sections and four small sections, each suitable for a contract unit. Harman Engineering Co., 144 Fredonia Avenue, Peoria, Ill., engineer.

Iowa

The Charles City Western are preparing plans for the extension of its line from Charles City, Iowa, in a northeasterly direction, a distance of 18 miles. This work is to be done next spring in connection with the electrification of the present line. E. R. Ernsberger, Charles City, Iowa, is general manager.

Kentucky

W. H. Courtenay, Louisville, chief engineer of Louisville & Nashville Railroad Company, is preparing to construct a tunnel at Willow Shoals, Ky., to shorten the line about 3 miles.

Minnesota

The Minnesota Drainage Co., Baudette, Minn., which has contract for 72 miles of drainage ditches in Beltrami County, has sublet the clearing. The 72 miles of roadway work will be sublet; part of the excavation also may be sublet. Ditches have 12-ft. tap, are 5 ft. deep and have 4-ft. base.

Surveys are under way by the Grand Marais & Northwestern Railway Company, A. Mitchell, Duluth, president, for extending its line from Cascade Junction to Ely, distance, 55 miles. John Bergman, Duluth, is contractor for 20-mile section now being constructed.

Sealed bids will be received until Jan. 12th, 1915, by D. E. Fulton, county auditor, at Ada, Minn., for the construction of Judicial Ditch No. 52, located in Good Hope township, Norman county, Minn. This work consists of a main ditch 12 miles long 4 to 12 feet wide at bottom, average depth 6 feet, slope of sides 1 to 1; also 4 open laterals, total length 18 miles, 4 to 6 feet wide at bottom, average depth 5 feet, slope of sides 1 to 1; total cubic yards to be excavated 500,000. Estimated cost of open ditches is $50.000. This work is best suited dor a dry land or dragline excavator. There is no timber to be cleared from right of way; the character of the soil is clay; one railroad to cross; nearest railroad station is Selby, located two miles from the work. A certified check for 10% is required with bids; 75% payments are to be made upon monthly estimates. J. H. Baugh of Warren, Minn., is the engineer.

Contracts probably will be let sometime in first two weeks of January for construction of Judicial Ditches Nos. 14, 20, 17, 18, involving 199 miles of ditching estimated to cost $547,000. E. W. Kibbey, International Falls, is engineer in charge.

County Commissioners, E. S. Shepard, county auditor, Marshall, Minn., will have several ditch jobs to let in the near future.

Board of County Commissioners will hold a meeting January 8th for the purpose of receiving the viewers' and engineers' report on County Ditch No. 2, which will drain about 80,000 acres of land in the Bear River district. County Road Engineer E. K. Coe estimates the cost at $185,000. The total length of the ditch and laterals will be 93 miles, and the probable quantities are: 902,000 cubic yards of earth; 27,500 cubic yards of rock; grading 80 miles of roadway; constructing 66 steel bridges and the laying of 315 galvanized culverts.

Missouri

Sealed bids will be received by the supervisors of the Fabius River Drainage District, Marion and Lewis Counties, Missouri, at the office of the secretary, J. H. Best, Illinois State Bank, Quincy, Illinois, until 9:30 o'clock a. m., January 20, A. D. 1915, for the construction of the levees and ditches and diversion channels for the Fabius River Drainage District. There are about 2,000,000 cubic yards of ditch and channel excavation and levee fill. The work will be divided into seven principal sections and four small sections, each suitable for a contract unit.

For further information inquire of Harman Engineering Co., 144 Fredonia Avenue, Peoria, Illinois. Jacob A. Harman, is chief engineer.

Mississippi

The Cybur, Gulf & Northwestern Railway are preparing plans for extending its railway from Picayune, Miss. Cyril Louisell is general manager.

Nebraska

Sealed bids will be received by Drainage District No. 1 of Otoe and Johnson Counties, Nebraska, until ten o'clock a. m. on January 11, 1915 for the construction of new channels for the Little Nemaha River, south branch of the Little Nemaha River, Spring Creek, Wilson Creek, Walnut Creek, Muddy Creek and Laterals A. to H. inclusive. The estimated yardage is about 1,650,000 cubic yards, about 6,750 squares of cleaning river channel, and about 1,200 cubic yards of levee work. A certified check for $10,000 on a Nebraska bank, or Chicago or St. Louis exchange, must accompany bid. All work to be completed by January 1, 1917. Plans and specifications, profiles, and a general map of the district can be procured from Schwaderer & Shannon, Nebraska City, Neb., for the sum of $2.00. $3.00 additional will be charged for section detail maps. Or they may be examined in the office of Schwaderer & Shannon, Nebraska City, Nev., or the office of the secretary, Talmage, Neb. Money is available to pay for the work, and no bonds need be floated. Right is reserved to reject any and all bids. All bids shall be sealed and addressed to James Meek, secretary of said district, at Talmage, Neb.

Full plans and specifications will be on file and may be seen by contractors who are interested in this work at the office of the Clyde W. Drew Co., 926 City National Bank Bldg., Omaha, Nebr.

New York

The International Railway has applied to the New York Public Service Commission, Second district, for a certificate of convenience and necessity to build a new electric line between Buffalo, N. Y., and Niagara Falls. The project has been under consideration for over a year, and the company has already bought real estate for the right of way and has been given necessary franchises. The company now operates street railways in Buffalo, Niagara Falls, Lockport, Tonawanda and North Tonawanda. E. G. Connett, president, Buffalo.

The Erie R. R. and subsidiary lines will carry out double tracking work as follows: Between Allegany, N. Y., and Carrolton, 5.6 miles; Chicago & Erie between Lomax, Ind., and Griffith, 36 miles; Sharon Railway, between Ferrona, Pa., and West Middlesex, and between New Castle Waterworks and New Castle Junction, 12 miles; Nypano Railroad from Steamburg, N. Y., to Waterboro, 9 miles, and Cleveland & Mahoning Valley, on the Canal branch, from Youngstown Ohio, to Girard, 5 miles.

New Jersey

The Erie Railroad is planning to spend $3,500,000 to construct freight line from Jersey City to Suffern, N. Y. R. C. Falconer, New York City, is superintendent of construction.

Tennessee

The engineering contract for the South Fork Drainage District has been awarded to Stein & Harbert and S. W. McClesky. It is expected that the contract for constructing the ditch will be ready to offer to contractors in the spring.

Texas

A road which will be known as the Texas, New Mexico & Eastern Railroad Company, Thos. Moore, Austin, chief engineer, has been organized to construct railway from San Antonio to Lamesa, Tex., distance about 272 miles.

The Kansas City, Mexico & Orient Railroad, R. P. Parker, San Angelo, Texas, chief engineer, will start work soon on constructing a branch line between San Antonia and Del Rio, Texas.

S. A. Robertson, San Benito, Tex., president of San Beniot & Rio Grande Valley Railroad, have revived plans for constructing railway from Mission, Tex., to Roma, distance about 60 miles.

West Virginia

It is being proposed by the Parkersburg & Western Railroad Company, C. P. Payton, chief engineer, and bids will be opened about January 1st for constructing 56-mile line from Charleston to Palestine, W. Va.

Contracts will probably be awarded in February by Cherry River Southern Railway Company, for constructing 35-mile line from Curlin, W. Va.

Wisconsin

Van Ostrand—Wisconsin & Northern R. R., C. H. Hartley, general manager, Oshkosh, is taking bids on a 27-mile grading job between Van Ostrand and Condon.

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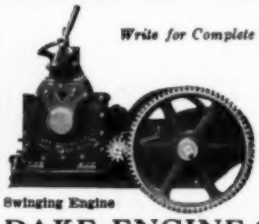

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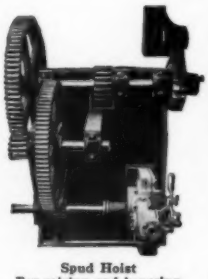

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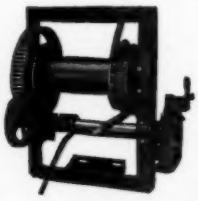

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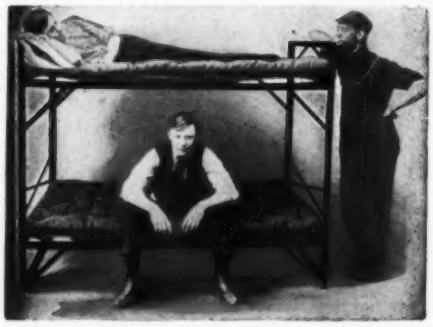

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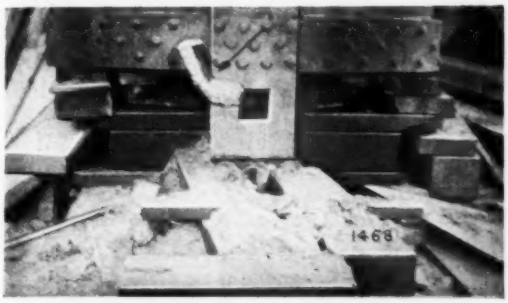

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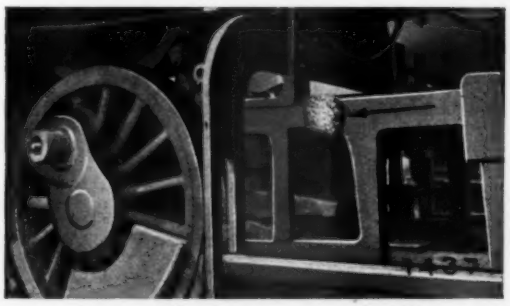

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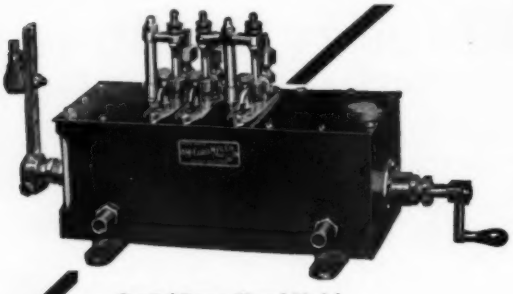

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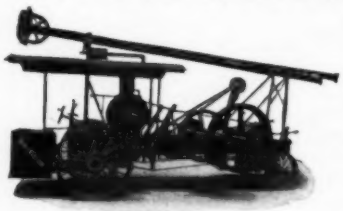

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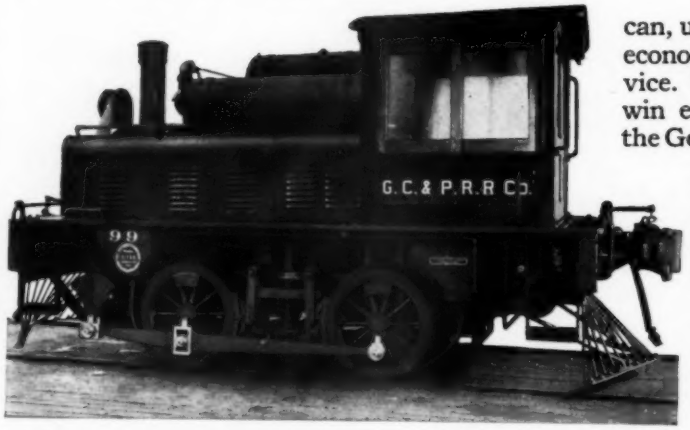

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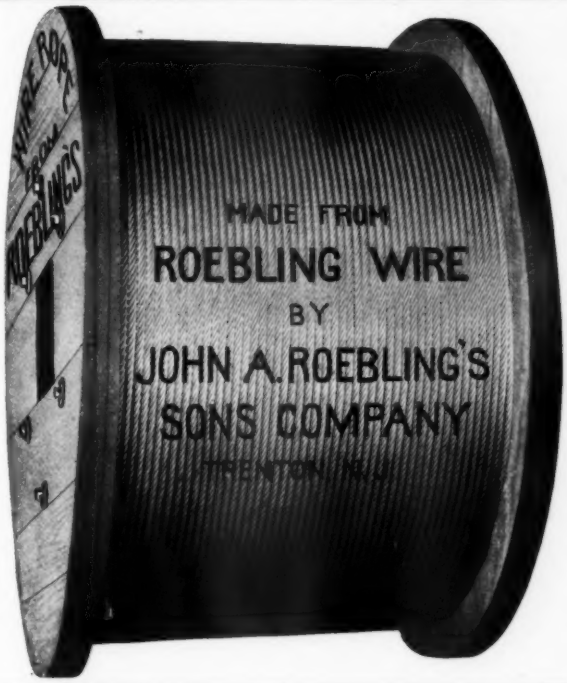

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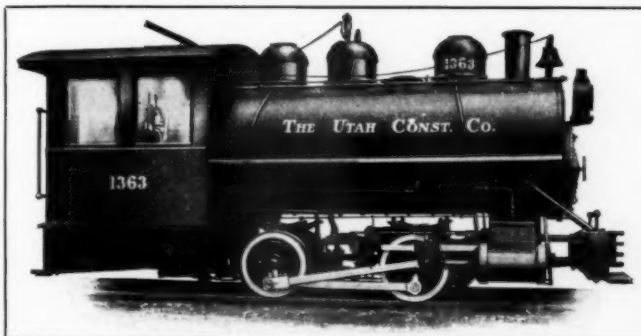

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